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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,945	05/11/2001	Michael L. Imundo	10420/15	6611

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EXAMINER

COZART, JERMIE E

ART UNIT

PAPER NUMBER

3726

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,945

Applicant(s)

IMUNDO ET AL.

Examiner

Jermie Cozart

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16, and 18-22 is/are rejected.
- 7) ☒ Claim(s) 6 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Reopening of Prosecution After Appeal

1. In view of the appeal brief filed on March 25, 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130; 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4, 5, 7, 9, 10, 12, 13, 15, 16, 18, 20, and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Richter et al. (5,913,555) in view of Heier et al. (5,285,397).

Regarding claims 1 and 12, Richter discloses a method for repairing a sheet metal portion (4) of a structure (2), wherein a digital measuring device (10) is oriented.

Art Unit: 3726

The device (10) captures the image of the structure in at least two dimensions in order to reproduce a repair part (4'). Richter also discloses measuring at least a portion of the structure (2) with the digital imaging device (10), saving the data generated in measuring the structure, and using the data to manufacture a repair part (4'). See column 4, lines 38-59 for further clarification.

Regarding claims 4 and 15, Richter discloses installing the sheet metal repair part (4'). See column 5, lines 31-36 for further clarification.

Regarding claims 7 and 18, Richter discloses automatically manufacturing comprising a multi-step process for material removal and material shaping such as cutting of the contour of the repair profile (4') from the sheet (14) by a CNC laser cutting apparatus, followed by welding, and then after machining the resultant weld or soldering seam produced by attachment of the repair part (4') to the remaining blade portion (2). See column 4, line 53 – column 6, line 14 for further clarification.

Regarding claims 10 and 20, Richter discloses a data manipulation step consisting of transferring data by delivering the data from the computer (11) to the CNC control unit (12). See column 2, lines 30-33 for further clarification.

Richter, however, does not explicitly disclose the following: whether the digital measuring device is a multi-axis digital measuring device; adding additional data for use in automatically manufacturing the repair part; orienting the device with respect to the structure via an orienting feature selected from the group consisting of plumb lines, orientation holes, a feature of the structure, and a feature of the portion; translating the data from a first format to a second format; or finally whether the repair part produced is composed of sheet metal.

Heier discloses orienting a multi-axis digital measuring device (7a-7d), adding additional data (i.e. position measurement values, angular measurement values) for use in a manufacturing process. Each of the devices (7a-7d) are oriented with respect to the structure (3) via a feature of the structure meaning that devices are oriented/spaced around the periphery of the structure to capture particular features of the structure (3). The data is translated [via algorithms of three dimensional intersect (triangulation)] from a first format (i.e. stored calibration data, measurement data delivered by the image processing device) to a second format (i.e. calculated coordinates of each point on the part). *See column 3, line 57 – column 6, line 11, plus figures 1 and 6 for further clarification.*

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide digital measuring device of Richter as a multi-axis digital measuring device, to add additional data for use in automatically manufacturing the repair part, to orient the device with respect to the structure via an a feature of the structure, to translate the data from a first format to a second format, and to manufacture the repair part out of sheet metal, in light of the teachings of Heier, in order to effectively record horizontal optical intersects of a given work-piece at different heights.

Although it is inherent that the sheet plate of Richter is metal due to type of the part (i.e. turbine blade) being repaired and the associated characteristics of the sheet plate described, it would also have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the repair part from sheet metal, since it has been held to be within the general skill of a worker in the art to select a known

material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

4. Claims 3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter/Heier as applied to claims 1 and 12 above, and further in view of Applicants' Appeal Brief (3/25/04).

Richter/Heier as modified above discloses all of the claimed subject matter except for planning a process to manufacture the repair part.

Applicants' Appeal Brief discloses at page 9, "that manufacturing process planning, and the details of manufacturing process planning, are well known to those skilled in manufacturing engineering." Applicant's Appeal Brief goes on to state that "a process plan is a very detailed, step-by-step process of how to accomplish the manufacturing. For instance, in the above process, one step would be to state that the repair pad will be manufactured in a given department and perhaps on a given machine, using a particular set of tools and a particular CNC program."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to plan a process to manufacture the repair part of Richter/Heier, in light of the teachings of Applicants' Appellant Brief, in order to determine how to accomplish the manufacturing of the part.

5. Claims 8, 11, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter/Heier as applied to claims 1 and 12 above, and further in view of Flint (5,736,201).

Richter/Heier as modified above discloses all of the claimed subject matter except for transferring the repair part from a first workstation to a second workstation, or mounting a laser-scanning device on the multi-axis digital measuring device, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device.

Flint discloses transferring an unfinished part (PFH) from a first workstation (second support) to a second workstation (third support) in order to build a duplicate product and match the color of the duplicated part to the original part, and mounting (meaning to arrange for use, see Webster's Collegiate Dictionary, tenth edition) a laser-scanning device, in order to record the topography of the object being scanned to produce a digitized signal. The laser is mounted on the multi-axis digital measuring device, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device. See figure 1, plus columns 2 and 3 for further clarification.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to transfer unfinished repair part of Richter/Heier from a first workstation to a second workstation for additional finishing steps, in light of the teachings of Flint, in order to more effectively build a duplicate product based on the scanned information. It would also have been obvious to mount a laser-scanning device on the multi-axis digital measuring device of Richter/Heier, wherein the laser is used to measure at least a portion of the structure with the multi-axis digital measuring device, in light of the teachings of Flint, in order to accurately record the topography of the object being scanned to produce a digitized signal.

Allowable Subject Matter

6. Claims 6 and 17 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of their respective base claims and any intervening claims.

Response to Arguments

7. Applicant's arguments, see pages 6-15, filed 3/25/04, with respect to the rejection(s) of claim(s) 1-5, 7-16, and 18-22 under Richter and Flint have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new ground(s) of rejection are made in view of Richter in view of Heier, Richter/Heier in view of Applicant's Admitted Prior Art, and finally Richter/Heier in view of Flint.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references cited on the attached PTO-892 are cited to show multi-axis digital measuring devices.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermie Cozart whose telephone number is 571-272-4528. The examiner can normally be reached on Monday-Thursday, 7:30 am - 6:00 pm.

10. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3726

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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